UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/842,763	04/27/2001	Kazuya Arakawa	0033-0718P	2824

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EXAMINER
LI, AIMEE J

ART UNIT	PAPER NUMBER
2183	

DATE MAILED: 11/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/842,763	ARAKAWA ET AL.
	Examiner	**Art Unit**	
	Aimee J. Li	2183	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>24 August 2005</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-12* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *2-8* is/are allowed.

6)☒ Claim(s) *9 and 12* is/are rejected.

7)☒ Claim(s) *10 and 11* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1.   Claims 2-11 and new claim 12 have been considered. New claim 12 has been added as

per Applicant's request.

Papers Submitted

2.   It is hereby acknowledged that the following papers have been received and placed of

record in the file: Amendment as received on 24 August 2005.

Allowable Subject Matter

3.   Claims 2-8 are allowed.

4.   Claims 10-11 are objected to as being dependent upon a rejected base claim, but would

be allowable if rewritten in independent form including all of the limitations of the base claim

and any intervening claims.

Claim Rejections - 35 USC § 102

5.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on
> sale in this country, more than one year prior to the date of application for patent in the United States.

6.   Claim 9 is rejected under 35 U.S.C. 102(b) as being anticipated by Onozaki, U.S. Patent

Number 5,404,539 (herein referred to as Onozaki). Regarding claim 9, Onozaki has taught a

data driven type information processing apparatus, comprising:

   a.   A self-synchronous transfer control circuit (14 of Fig.4) controlling by a transfer

           request signal and a transfer acknowledge signal (see signals entering 10 and

           leaving 15 of Fig.4) transfer and operating processes (see Col.6 lines 25-33) of a

data packet including at least a destination node number, a generation number, an

instruction code and data (see Col. 1 lines 35-53 and Col.5 line 56 - Col.6 line 2),

b.   At least one pipeline register (61 ofFig.9) controlled by said self-synchronous

transfer control circuit, for storing said data packet (see Col. 12 lines 3-43),

c.   An input/output control circuit (15 of Fig.4) outputting said data packet from said

information processing apparatus when said data packet includes a host transfer

flag (see Col. 1 lines 43-53; Col. 2 lines 26-47; Col. 8 lines 12-44; and Col.l4

lines 10-15),

d.   A data packet erasing circuit (13 of Fig.4) erasing a data packet stored in said at

least one pipeline register and outputting other data packets from said information

processing apparatus (see Col. 11 line 63 - Co I. 12 line 2 and Col.12 lines 36-54).

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

8.   Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Onozaki, U.S.

Patent Number 5,404,539 (herein referred to as Onozaki) in view of Silberschatz and Galvin

©1998 (herein referred to as Silberschatz). Onozaki has taught a method of operating a data

driven type information processing apparatus, comprising the steps of:

a.   Providing a self-synchronous transfer control circuit (14 of Fig.4);

b.   Controlling by a transfer request signal and a transfer acknowledge signal transfer

(see signals entering 10 and leaving 15 of Fig.4) and operating processes (see

Col.6 lines 25-33) of at least one data packet including at least a destination node

number, a generation number, an instruction code and data (see Col. 1 lines 35-53

and Col.5 line 56 - Col.6 line 2);

c.   Providing at least one pipeline register (61 ofFig.9) controlled by said self-

synchronous transfer control circuit, for storing said at least one data packet (see

Col. 1 lines 43-53; Col. 2 lines 26-47; Col. 8 lines 12-44; and Col.l4 lines 10-15);

and

d.   Erasing a first one of said at least one data packet stored in said at least one

pipeline register (see 13 of Fig.4; Col. 11 line 63 - Co I. 12 line 2 and Col.12 lines

36-54); and

e.   Outputting a second one of said at least one data packet from said information

processing apparatus to an external host when said data packet includes a host

transfer flag (see 13 of Fig.4; Col. 11 line 63 - Co I. 12 line 2 and Col.12 lines 36-

54).

9.   Onozaki has not taught when a dead-lock state occurs:

a.   Erasing at least one data packet; and

b.   Outputting at least one data packet.

10.   Silberschatz has taught when a dead-lock state occurs (Silberschatz pages 7.2, 7.5, and

7.25):

a.   Erasing at least one data packet (Silberschatz pages 7.33-7.35); and

b.   Outputting at least one data packet (Silberschatz pages 7.33-7.35).

11.   A person of ordinary skill in the art at the time the invention was made, and as taught in

Silberschatz, would have recognized that when deadlock occurs, starvation is possible, thereby

halting execution (Silberschatz page 7.3). By implementing the recovery from deadlock taught

by Silberschatz, starvation is prevented and the system continues to execute the process.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the

invention was made to incorporate the deadlock recovery of Silberschatz in the device of

Onozaki to ensure that process starvation is prevented and execution is continued.

Response to Arguments

12.   Applicant's arguments with respect to claim 12 have been considered but are moot in

view of the new ground(s) of rejection.

13.   Applicant's arguments filed 24 August 2005 have been fully considered but they are not

persuasive. Applicant's argue in essence on page 6 "...However, the portions of Onozaki

referred to in the Office Action do no discuss the transfer of a data packet having a certain flag

outside the information processing apparatus when a flag is present..." This has not been found

persuasive. The claim language explicitly recites "an input/output control circuit outputting said

data packet from said information processing apparatus when said data packet includes a host

transfer flag". There are two interpretation of this claim language that could be read upon in

Onozaki.

14.   The first interpretation is based upon the fact that there is no explanation in the rest of the

claim language nor is there any other reference in the claim language to the "host transfer flag"

to clarify what the flag is. So, "flag" by the generally accepted definition of the term is "any of

various types of indicators used for identification (Rosenberg's <u>Dictionary of Computers,</u>

<u>Information Processing & Telecommunications</u>)". Therefore, a "host transfer flag" is an

indicator identifying something with regards to the transfer to/from the host. Onozaki states in

column 14, lines 11-15 "...selectively outputs the input data packet PD either outside

information processor 2...based on the destination information (node number data 'node' or

generation number data CD) of the input data packet" and in column 1, lines 43-50 "...a data

packet PD includes...the field F2 stores node number data 'node', the field F3 stores generation

number data 'CD'..." Therefore, Onozaki has taught that the data packet has a flag, e.g. field F2

or field F3, that identifies something with regards to transferring to/from the host, e.g. the data

packet is outputted either outside the information processor or to a buffer based on field F2 and

field F3.

15.   The second interpretation is based upon the claim interpretation of the language

"information processing apparatus". In the broadest sense of the terms, this is merely an

apparatus that processes, e.g. operates, upon the information, e.g. data, in some manner. This

can range from the entire processor system, which includes all memory, execution units, etc., to a

single element within the processor system that performs operations on the data somehow, like

the individual execution units or individual memory units that store the data. The claim language

does not limit the "information processing apparatus" interpretation. It merely states that there

must be circuitry for doing certain operations. With this interpretation, Onozaki's unfiring flag

in column 4, lines 37-45, which was disregarded by Applicants in the remarks presented, is a

valid match to the claim language as well. Onozaki's unfiring flag determines whether or not the

data packet is to be outputted from the system, since the unfiring flag, when set, signals the

system that the data packet cannot be processed by the processing unit and program storing unit,

e.g. cannot be output from these information processing apparatuses, until the flag is unset.

Also, if the data packet continues to circulate inside the system, as stated in column 4, lines 42-

45, because the unfiring flag is set, then that means whether the packet is outputted to outside the

system dependent on the flag, since the packet will continue to circulate inside the system until

the flag is unset and not be outputted while the flag is set.

Conclusion

16.   Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

17.   A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

18.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Aimee J. Li whose telephone number is (571) 272-4169. The

examiner can normally be reached on M-T 7:30am-5:00pm.

19.   If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Eddie Chan can be reached on (571) 272-4162. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

20.   Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AJL
Aimee J. Li
10 November 2005

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